

Applicant : Alan Coull
Serial No. : Unassigned
Filed : Herwith
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Attorney's Docket No.: 11033-064001

REMARKS

With the entering of the above amendments, claims 1-13, 16, 17 and 19 are pending.
Applicant amended claims 2-11, 13, 16, 17 and 19, and canceled claims 14, 15, 18, 20 and 21.
Applicant also amended the Abstract.

Applicant requests that all pending claims be examined.

Attached is a marked-up version of the changes being made by the current amendment.

Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: May 8, 2001

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Version with markings to show changes made

In the claims:

Claims 14, 15, 18, 20 and 21 have been cancelled.

Claims 2-11, 13, 16, 17 and 19 have been amended as follows:

2. (Amended) A method according to claim 1 wherein [characterised in that] the printing apparatus is mounted on a carriage and the method includes continuously moving the carriage transversely across the lanes, relative to a base structure relative to which each of the articles of the set is held stationary during printing.

3. (Amended) A method according to claim 2 wherein [characterised in that] the carriage is moved transversely of the lanes at a generally constant speed.

4. (Amended) A method according to claim 1 wherein [any one of the preceding claims characterised in that] all of the articles of the set positioned at the printing station simultaneously whilst the printing apparatus is moved transversely across all the lanes.

5. (Amended) A method according to claim 1 wherein [any one of claims 1 to 3 characterised in that] the articles are conveyed severally in their respective lanes, to the printing station, and are arranged to be present at the printing station so that the printing apparatus may be moved into registry with the articles and printing performed, whilst the printing apparatus is continuously moved.

6. (Amended) A method according to claim 1 wherein [any one of the preceding claims characterised in that] the printing apparatus includes a housing mounted on the carriage, and print head movement to and from the printing position is relative to the housing of the printing apparatus.

7. (Amended) A method according to claim 1 wherein [any one of the preceding claims characterised in that] the print head is of the kind having a plurality of printing elements which are selectively actuated during printing by a control means to effect printing of desired information on each of the articles.

8. (Amended) A method according to claim 1 wherein [any one of the preceding claims characterised in that] the printing apparatus is a thermal printer in which there are printing elements arranged in a generally linear array along the print head with the array extending generally transversely to the direction of movement of the printing apparatus across the lanes, the method including selectively energising the printing elements during printing to remove pixels of marking medium from a carrier positioned between the printing elements and the article.

9. (Amended) A method according to claim 8 wherein [characterised in that] the method includes moving the carrier relative to the print head as the printing apparatus moves transversely of the lanes of articles during printing, so as that fresh carrier is continually be positioned between the print head and the article on which information is being printed.

10. (Amended) A method according to claim 8 wherein [or claim 9 characterised in that] the printing apparatus includes a housing within which there is provided a storage spool for unused carrier, a take-up spool for used carrier, a first motive means to move at least the take-up spool to take up used carrier, and a second motive means to move the print head to and from the printing position.

11. (Amended) A method according to claim 1 [any one of the preceding claims] which includes conveying the articles of the set in their parallel lanes to the printing station, arresting movement of the set of articles at the printing station while the information is printed on each of the articles of the set.

13. (Amended) A method according to claim 12 wherein [characterised in that] the method is applied to printing apparatus having a thermal print head having printing elements

which are selectively energised during printing to melt and remove pixels of marking medium from the carrier and deposit the pixels of ink on to the articles.

16. (Amended) A printing station for performing the method of claim 1 [any one of the preceding claims], the printing station including a carriage, a printing apparatus[, means to mount the printing apparatus] mounted on the carriage, [means to move] the carriage being moveable to move [and thus] the printing apparatus transversely of a plurality of lanes whilst the printing apparatus effects [and to effect] printing on each of a plurality of articles at the printing station, each of the articles being located in one of the lanes, [characterised in that the means to move] the carriage [is adapted to move the carriage] being moveable substantially continuously across the lanes whilst [and] the printing apparatus [being adapted to print] prints the information on each of the articles of the set in turn without or substantially without stopping.

17. (Amended) A station according to claim 16 wherein [characterised in that] the carriage is mounted on a gantry which extends over [or under] the lanes and the printing apparatus is moved over [or under] the lanes [respectively,] on the carriage.

19. (Amended) A station according to claim 16 wherein [or claim 17 characterised in that] movement of the carriage is controlled by a controller [control means] which co-ordinates printing with carriage movement.

In the abstract:

A method of printing information on each article of a set of articles [(14a to 14e)] arranged in generally parallel lanes [(a to e),] at a printing station [(10)], the method including continuously moving a printing apparatus [(16)] relative to the lanes [(a to e)] to bring the printing apparatus [(16)] into registry with each article of the set [(14a to 14e)] in turn, and at each registry position, whilst continuing to move the printing apparatus [(16)], moving a print head [(26)] of the apparatus [(16)] relative to the respective article [(14a to 14e)] to a printing position in which the print head [(26)] is capable of printing information on the article, continuing to move the printing apparatus [(16)] relative to the article whilst effecting printing

